FAA AVIATION NEWS

SEPTEMBER 1973

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The pleasures of night flying are many—if you know what to expect. See page 6.

FAA AVIATION NEWS

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Roberto Clemente

Ill-Fated Mercy Flight

The airplane that carried Roberto Clemente to his death had three strikes against it

On August 6 Roberto Walker Clemente was inducted into baseball's Hall of Fame at Cooperstown, N.Y.—posthumously. His three small children were there, and Mrs. Clemente, but Roberto himself had disappeared into shark-infested waters off San Juan, P.R., some eight months earlier, the victim of an accident that shocked the nation.

The sad train of events that led up to the death of Clemente began in September of 1972, when a venerable DC-7 which had logged over 12,000 hours, was purchased by Arthur Rivera's American Air Express Leasing Company and was flown into San Juan. Rivera, who had six hours of experience in the type, did not fly it again until New Year's Eve. Engine run-ups on the ground were performed, and the airplane was taxied at the airport on several occasions.

On one of these occasions the plane ran into a drainage ditch and damaged both inboard propellers against a concrete ditch. The two propellers were replaced, and the props were "tracked;" but although a test flight was required it was not performed.

When the cataclysmic earthquake struck Nicaragua on December 23, killing thousands of persons and turning thousands more out into the streets, an urgent need arose for air transport of relief supplies. Rivera leased the DC-7 to the Roberto Clemente Nicaragua Relief Committee, which was assembling a huge store of goods to ship to Managua, capital of the stricken country. Rivera's American Air Express Leasing Company also provided the three-man flight crew required for this type of aircraft; pilot, co-pilot and flight engineer.

The captain was fully qualified, with 12,400 total hours and 3,000 in type, and Rivera served as co-pilot, but the flight engineer held only an Airframe and Powerplant Mechanic's certificate and had no record of a medical certificate. The airplane was crammed with sacks of rice, sugar, blankets, medicines and other emergency supplies. No record of weight and balance computation was ever located by National Transportation Safety Board investigators, but the NTSB calculated from various eyewitness accounts and records that the airplane was 4,193 lbs. over its 144,750 lbs. maximum permissible gross weight when it took off.

According to the NTSB one individual was so disturbed to see 60 lb. sacks of sugar and other heavy goods placed forward of the cargo net and forward bulkhead that he told Clemente the aircraft was improperly loaded and unsafe. Clemente's reply, the report states, was that he did not know anything about the loading of planes but assumed that those loading knew what they were doing.

The assumption that other persons are responsible for the safe and correct operation of a leased aircraft—and are carrying out their responsibilities faithfully—can be a mistaken and even fatal assumption. In this instance the Customs Declaration and other official papers listed the Roberto Clemente Nicaragua Relief Committee as the operator of the DC-7. Normally when you lease an aircraft for your own use you become the operator.

You do not need to hold a commercial operator's certificate, as long as you do not carry persons or property for compensation or hire, but you do need to know how to maintain and operate the aircraft in accordance with regulations. A charter service is another matter: in such cases you engage the services of an FAA-certificated operator who is fully responsible for meeting all minimum standards of safety.

At five o'clock on the afternoon of December 31, 1972, the leased DC-7 was taxied over to a service ramp so that work could be done on the engines, which apparently were still not functioning satisfactorily. After three and a half hours of work on the engines, the airplane was taxied back to the cargo ramp and Clemente, with one other passenger, boarded. A VFR flight plan to Managua was filed.

By this time it was quite dark, of course, but visibility was good and only scattered clouds reported along their intended route. At 9:23 p.m. the DC-7 began its takeoff run, hugging the runway for at least 8,000 of the 10,000 feet available. Observers later reported that one of the engines was backfiring. When the aircraft finally broke ground, it was seen to climb out exceedingly slowly. Some two miles out, at an altitude of between 150 and 200 feet, the pilot radioed the tower that he was "coming back around."

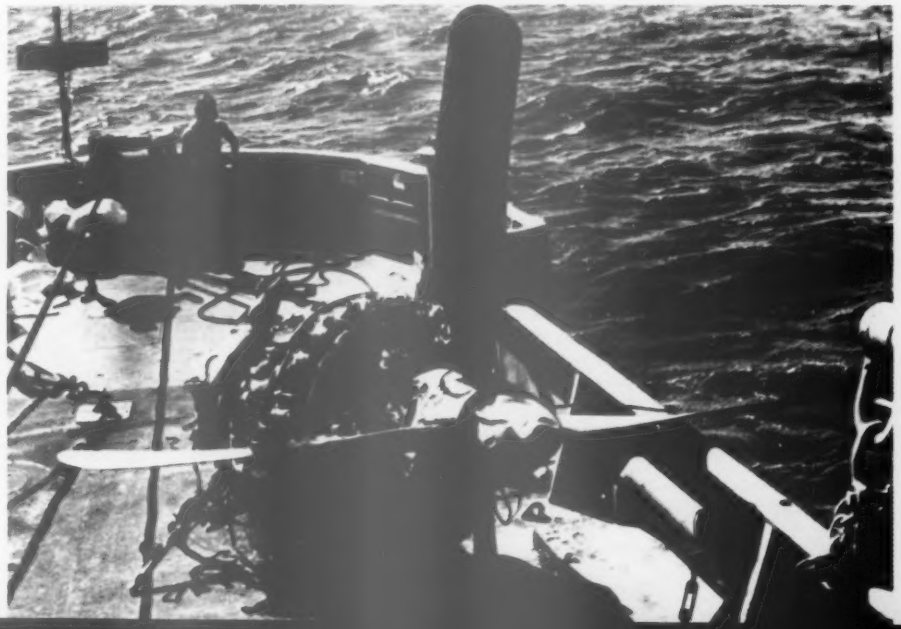
The aircraft was put into a shallow level turn, but the nose dipped and the ill-fated mercy craft dropped into the sea with a terrific crash that split the fuselage apart. Of the five persons on board, only the pilot's body was recovered.

Navy divers eventually recovered three of the four engines, and from this and other evidence the Safety Board determined that ". . . there was extensive internal failure in the inboard left engine during the takeoff—" and that the inboard right engine could not develop full power because of "excessive" wear.

Defective engines, unqualified flight crewmembers, excessive weight, improper loading . . . any of these factors alone could have ended the mercy flight tragically. In combination they were deadly.

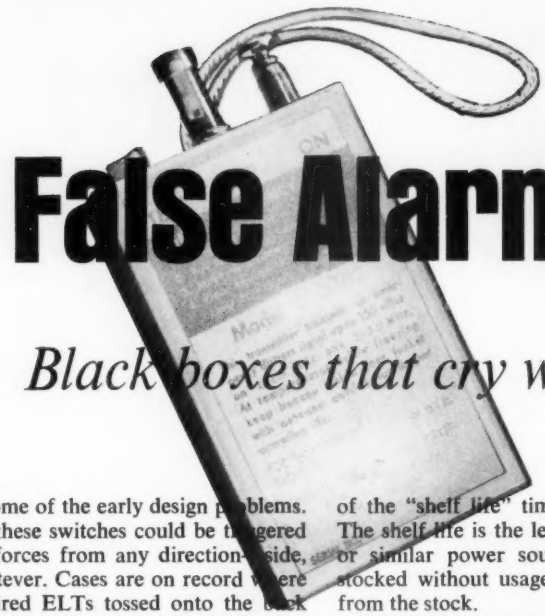
If you have any doubts about the exact responsibilities for maintaining or operating an aircraft—whether you own, rent, lease or charter it—consult your nearest FAA Flight Standards District Office. You may also send for the FAA pamphlet, "Look Before You Lease," free from the DOT Distribution Unit, TAD 484.3, Washington, D.C. 20590.

Divers eventually brought up three of the DC-7's engines. Two were found to be excessively worn.



False Alarm!

Black boxes that cry wolf



When the prolonged wail of an ELT comes out over the emergency frequency there is often no way for a listener to tell whether it is the real thing or a false alarm. They sound exactly the same. And some needless, expensive, frustrating and sometimes dangerous search missions have been instituted because of accidentally activated ELTs. As the use of emergency locator transmitters increases (with the mandatory installation deadline of December 30, 1973 fast approaching) accidental triggering of these units will probably also increase. The question has been raised, who is responsible?

Whenever a transmitter is installed in an aircraft, it in effect becomes a radio station and must have a Federal Communication Commission radio station license, for which there is a filing fee to FCC. (This *station* license is not to be confused with the radio operator's license, needed by any person who transmits on a radio.) Technically, only one license is required per airplane, but it must be kept up to date at all times, and every addition or modification to the transmitter system requires an entry be made on the license. All transmitters in an airplane can be covered by one license and one fee. FCC licenses are also required for ELTs, but because they do not have voice capability no fee is charged, nor is a radio operator license required to use them in emergency distress situations.

There are some transmitters with the ELT wail which *do* have voice capability. These are not classed as ELTs, and although they may be used as "survival craft stations" these devices do not meet the provisions of TSO-C91, and so will not satisfy the ELT requirement of the regulation. For these items a station license and operator license are required, and filing fees must be paid. In addition, a separate and independent radio transmitter and receiver, operating on other than the emergency channels, must be installed in the airplane for communications purposes.

The pilot-in-command of an ELT-equipped plane is personally responsible for any accidental inflight signalling by the ELT; if the plane is parked the owner is held liable. Such incidents are covered by the Communications Act of 1934, which prescribes fines and imprisonment for "the willful transmission of unauthorized signals on the emergency frequencies of 121.5 and 243."

Experience with the variety of ELTs now on the market is still so limited that inevitably some design errors or deficiencies remain to be corrected. Accidental activation is one of the more common problems which pilots should be aware of. The regulations require that the ELT be capable of activation both manually and automatically, by means of an inertial g-switch—sensitive to a given force of impact. While this feature offers added protection if the plane's occupants are not conscious after a crash, the g-switch, when used with electronic latching circuitry, presented some of the early design problems.

Some of these switches could be triggered by inertial forces from any direction—side, rear or whatever. Cases are on record where newly acquired ELTs tossed onto the back seat of an airplane have set off alarms that have consumed hours of search and jammed emergency frequencies for miles around. Actually the inertial-switch should be designed so that only a forward force—as when a plane crashes—could set it off, and most of the manufacturers have now corrected this deficiency.

ELT false alarms have occurred when the ELT antenna (which was intended for emergency transmission only) absorbed energy from adjacent transmitting antennas on the same aircraft and triggered the electronic g-switch circuitry when the pilot used his microphone. Manufacturers have been urged to check all products to eliminate this susceptibility. Aircraft owners who have ELTs in their planes can check them by tuning a receiver to the emergency frequency, and then transmitting through all normal channels from the lowest to the highest and back down again, listening for an ELT signal.

The engineering problems are being solved, but there may still be occasional individual installations that are prone to sending out bogus alarms. ELT problems seem to occur more frequently with certain airframes and when one of these is combined with an ELT that has marginal radio frequency susceptibility, a problem installation may result. These cases are not common, but pilots should be on the lookout for them. Make it a habit during the pre-takeoff check and just before engine shutdown to tune the VHF receiver to 121.5 and listen for an ELT signal. It is a good idea to locate ELT antennas as far as possible from other antennas on the plane.

A few ELTs have a "push-to-test" circuit for checking on the readiness state of the equipment but the great majority of ELTs do not. This underscores the importance of pilots making sure that their ELT power source (always separate from power sources in the airplane) is replaced at specified intervals. The ELT rule calls for replacement when half of the "shelf life" time has been exceeded. The shelf life is the length of time a battery or similar power source is allowed to be stocked without usage before it is removed from the stock.

There is some advantage to an automatic fixed ELT being mounted in the tail section because this part of the airplane is least likely to be destroyed by the force of impact. However, externally mounted ELTs are susceptible to thievery, and a check on their continued presence should form a part of the pre-flight observations. (On the other hand, an automatic portable ELT installed inside the cabin can be removed, if the airplane is in danger of sinking or burning, and thus continue to transmit.)

The law requires that the ELT be "attached," and experience has proved that ELTs are less subject to inadvertent activation when attached to the airframe or other solid structure. When fastened to panels, such as baggage compartment walls, they are more prone to triggering from vibration. Any time ground crews are moving an ELT-equipped plane there should be a receiver tuned to 121.5 to alert them immediately if the unit is accidentally set off.

Occasionally an ELT is set off by mistake during installation or maintenance. In that case the personnel doing the work is held responsible, so here, too, precautions are encouraged. Maintenance testing should be done in a "screen room" or metal enclosure whenever possible. If this cannot be done there are certain testing procedures which should be followed:

- Tests should be no longer than three audio sweeps.
- Tests should only be conducted during the first five minutes after any hour.
- If a test *must* be made other than during the first five minutes after the hour it should be coordinated with the nearest FAA tower or FSS.
- If the antenna is removable, a "dummy load" should be substituted during the test so that no signal dispersion takes place.

When ELTs are used for design or demonstration tests or training missions, they must not be operated on the emergency frequen-

cies—offset crystals must be used. For these purposes you can use 121.6, 121.65, 121.7, 121.75, 121.8, 121.85 and 121.9, *provided* the proper licenses are obtained; coordination is established with the appropriate FAA regional Frequency Management Office before the test; and no harmful interference is caused to voice communications on these frequencies.

One by one the bugs are being worked out of the design and installation of emergency locator transmitters. However, the success of the ELT will depend not only on equipment but on the cooperative spirit of pilots. This includes taking reasonable precautions to see that the ELT does not trigger a false emergency, and taking time to listen for the distress signals of others, thus augmenting the FAA and military aircraft already equipped for this purpose. A pilot can do this when flying by setting up a system to monitor the emergency frequency briefly every hour or so. This will serve the dual purpose of listening for another plane which may be in distress, and checking that your own ELT is not sending out a false alarm. (If it *is* your own ELT it will be very loud, and spread over adjacent frequencies.) For those who want to do a little more, there are ELT monitors (some at fairly low cost) which operate only on the emergency frequency and signal when an ELT signal is received.

To receive free copies of FAA Advisory Circulars AC 20-81, "Accidental or Unauthorized Activation of Emergency Locator Transmitters (ELT)" and AC 20-85, "Emergency Locator Transmitters and Receivers" write DOT Distribution Unit, TAD 484.3, Washington, D.C. 20590. ■

Needle in a Haystack

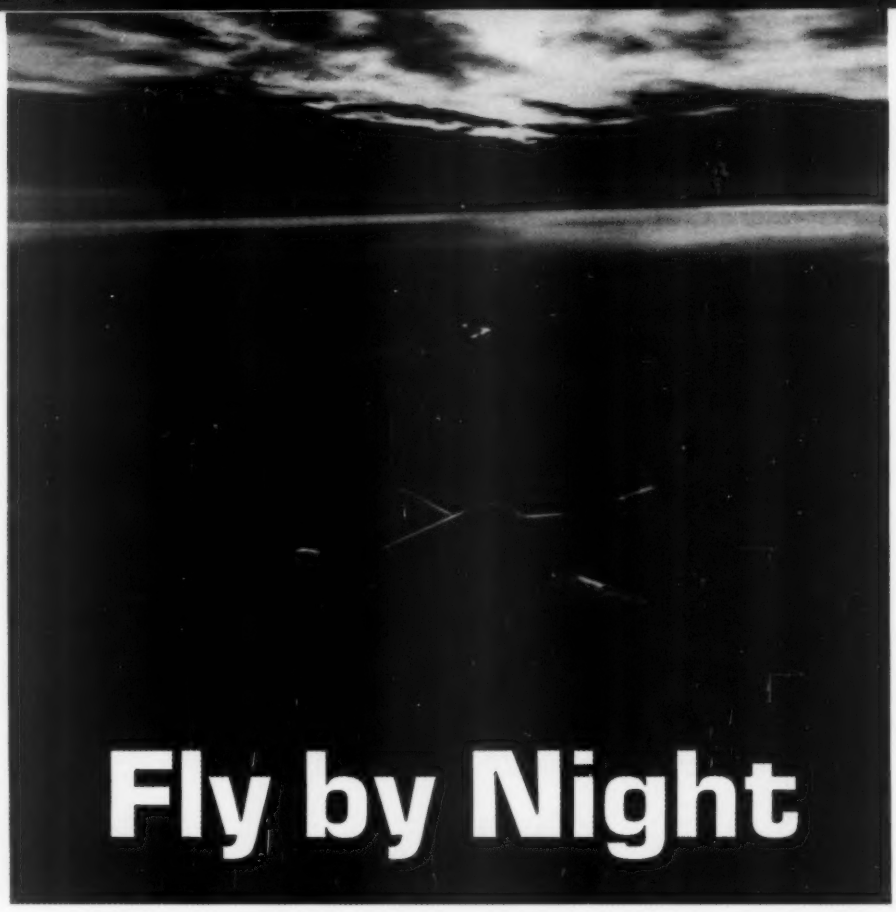
On the busiest afternoon of the Reading (Pennsylvania) air show in June, 1973, the 121.5 guard receiver of FAA's control tower picked up a very strong ELT signal. The constancy of the signal indicated that it was not in a moving airplane, and the strength of the wailing emergency call suggested that it was coming from a nearby source, perhaps from an aircraft parked on the airport. But which one?—at that moment there were upwards of 400 aircraft parked on the field, with the air show in full swing overhead.

FAA inspectors from the Allentown GADO, who were present at Reading to monitor the show, patrolled the airport in an automobile equipped with an aviation band receiver. Because the intensity of the signal tended to overpower the radio, the antenna was disconnected and replaced with a paper clip. With this miniature antenna and after much crisscrossing of the airport, the inspectors were finally able to pin down the source of the activated ELT as one of half a dozen airplanes. Then, using a handheld receiver with the volume turned way down, they followed the "trail" of sound to a locked **Cherokee.** On the floor of the airplane they spotted a partially opened box containing two brand new ELTs. Apparently one of them had been set off by being tossed onto the floor—or perhaps it had fallen down without the owner's knowledge.

At any rate, after a frustrating, time-consuming search for the operator of the aircraft, the ELT was deactivated, peace and quiet returned to the control tower (the unceasing wail of the ELT was a disturbing element in the tower cab), and the air show went on.

Incidents of this kind can be avoided if all pilots will remember that ELTs are extremely sensitive to impact—some much more so than others—and have to be handled with care. An inadvertent signal is not only a source of annoyance to others but a potential threat to safety, since it could drown out an actual emergency call.

Airplanes, airplanes everywhere—one of them was broadcasting a distress signal, but which one? In the tower the false alarm was a shriek that interfered with communication frequencies. On the ramp it represented a frustrating cat and mouse game.



Fly by Night

The idea of making a night flight, for the first time, often comes over a pilot as a sudden inspiration. Why not? Why stay over in a strange motel, when you could be home with your loved ones in a few hours? There are fewer planes in the sky at night, less turbulence, usually better weather, fewer guys hogging the frequencies, less traffic in the pattern, and with the kind of lighting used nowadays an airplane can stand out like a Christmas tree in a coalmine.

All true—but . . . there are some problems. Flying at night means operating in a very different environment than in daytime. In fact, night flying is very close to instrument flying, in that your reference to the ground is usually negligible. Most of the time (except for bright moonlit nights) you cannot see the ground at all. What you see are lights and lighted objects only, no horizon, little or no distinction of the landscape. You might be able to spot another airplane 50 miles away, but you could miss a hunk of timber 50 feet ahead.

Flying at night is not inherently dangerous if you are prepared for it, but it is not something you want to undertake for the first time on the spur of the moment. The revised FAA airman certification rules (FAR Part 61) which go into effect November 1, 1973, require an applicant for an unrestricted private pilot certificate to have at least three hours of night flying instruction, including ten takeoffs and landings. Otherwise his certificate will note that it is good for daylight flying only.

Earlier Federal Aviation Regulations said nothing about night flying instruction for private pilots, only that you could not carry passengers at night unless you had accomplished five takeoffs and landings within the past 90 days. The new regulations are not retroactive—in other words, present certificate holders will not have to have their tickets endorsed for night flying—but FAA strongly suggests that no pilot attempt a cross country flight after sundown without having at least three hours of local night flying experience under his belt.

One of the great potential dangers in night flying is disorientation. On the ground we are so accustomed to adapting ourselves to the reduced level of illumination at night that we make the necessary adjustments more or less unconsciously. (Nevertheless if we are caught in an unexpected black-out, we are apt to panic.) The VFR pilot who flies at night must adjust to relying on his instruments for controlling his aircraft attitude; what he can see of the darkened earth below will be of little help, and perhaps misleading. Taking off into darkness, the pilot abruptly passes out of the range of visible reference to the ground, and unless he can keep his wings level and his climb angle true by watching his instruments his flight is apt to terminate prematurely.

Conversely, pilots who extend a flight beyond sundown because the sky seems still well illuminated with twilight are sometimes rudely surprised by the lack of visibility at ground level when they attempt a landing. The phenomenon known as "dark adaptation" of the eye does not take place all at once, and may require more time than the descent of the airplane.

Preparation for a safe night flight requires more preflight effort on the part of the pilot than a daytime VFR flight in almost all aspects, especially the following:

Flight Planning. An extra margin of safety is the watchword here, since errors cannot always be visibly detected. The fuel reserve should be more than adequate, to allow for some wandering off course. Ceiling and visibility minimums may be doubled by cautious pilots. Frontal storm areas should be given a wider berth than in the daytime, since clouds often cannot be seen at night until they are already at hand; precipitation should be avoided like the plague for VFR flying. It is a good idea to choose a route that you have already flown over in daylight, so that in the event of an emergency landing you will have some idea of what the terrain below is like.

Airports along the way should be carefully plotted, on paper as well as in your mind. Use a heavy black marking pencil on the chart, for easy identification. Avoid planning to fly over large bodies of water at night; it is almost impossible to ditch an aircraft successfully in the dark. Taking a passenger along, preferably another pilot, is an excellent safety measure; a companion in the cockpit can help keep you awake if you are one who tends to get sleepy in the monotony of a night environment, with its lack of visual stimulation.

Preflight Inspection. Make your normal check, with extra attention to small details, since a night forced landing is nothing pleasant to contemplate. Do the job before the light fails, if at all possible; otherwise provide adequate illumination, not a 39 cent flashlight. Make sure that the windshield and other windows are perfectly clean; visibility is low enough at night without obscuring it further with grime. Check the radios carefully and turn on navigation, landing and panel lights. (More than one inexperienced pilot has sweated out a night flight without panel illumination because he could not determine, inflight, how to turn on the seldom used panel light.)

Supplies. You need a working flashlight of course, preferably two: a small light for the cockpit, and a larger one in the event you have to complete the journey afoot. You need *up-to-date charts*, with the frequencies of ground stations you may be using readily available. A portable radio receiver can be invaluable. If you plan to fly over 10,000 feet, oxygen equipment is essential; lack of sufficient oxygen may cause your vision to suffer without your realizing it.

Visual Adaption. Most persons require about half an hour of exposure to total darkness before their eyes achieve their maximum dark adaption. Dashing from a brightly lighted terminal into a dimly lit cockpit will not give you all of your potential seeing ability for a night takeoff. Plan to sit in the cockpit for some time, going over your charts, drinking coffee, or just relaxing. Smoking is not a good idea, since this may reduce your vision slightly.

Fatigue will also affect vision, and if you have spent the day in glaring sunlight without the protection of proper sunglasses you are really ill-prepared to fly at night. An Air Force medical study concluded that a pilot can lose from 30 to 50 percent of his night vision after several hours of exposure to bright sunlight, especially in a highly reflective environment, such as sand, sea or snow. The effect is cumulative, and repeated exposure may leave you with night-poor vision for as long as a week. Recovery normally follows simply as a result of resting the eyes or protecting them from bright light, but restoration of full visual powers is a gradual process. Do not expect good night vision after a day on the beach or the ski slopes.

Incidentally if you own glasses for near vision, you should have them with you at night, even though you may not normally need them during the day. Reduced light levels make it more difficult for the eye to focus on small objects or print. Some aircraft are equipped with red light in the cockpit, as an aid to adapting the eyes for seeing in the dark, but remember that such light will make it impossible to read any marking or charting in red.

Takeoffs. Familiarize yourself with the runway layout before you start to taxi. It is quite embarrassing to get lost just trying to find the active runway in the dark. Remember that the blue lights outline the taxiways. (You may find the new flush green centerline taxiway lights at a few airports). Taxi more slowly than normal, in view of the reduced visibility. Before you gun the engine make sure that you can read all of the instrument faces easily and clearly, and that you can locate all of the knobs, levers, switches, etc. you may need—visually as well as manually. If the engine does not sound just right, or the radio transmission is faulty, taxi back to the ramp and check everything out. When you do take off, realign your gyro compass with the runway before you break ground. Keep the turns fairly shallow and the airspeed up where it belongs.

En route. If you've taken the trouble to familiarize yourself with the position of prominent stars and/or the moon during the time of your flight, these heavenly bodies will give you a visual reinforcement for the data you derive from your instruments. Do not depend on your eyes for safe altitude clearance, and remember that the figure given for for the highest point of terrain within a given square on the VFR sectionals does not assure you clearance over man-made structures. You may want to use an IFR en route chart for this purpose; it will give you the altitude for a 2,000 foot clearance over all obstacles —a good safe cushion you may have reason to be thankful for. The altimeter sometimes plays tricks on you at night. For example, if your flight takes you over mountainous country, the Venturi effect of wind moving through a mountain pass can give you an altimeter reading as much as 1,500 higher than you actually are.

If you have any doubt about your actual position, you can ask the nearest FSS for a DF bearing, or request a radar steer from the center. Such cockpit instruments as distance measuring equipment (DME) and the Automatic Direction Finder (ADF) are a big help at night. DME tells you your exact distance from a VORTAC (some also read out the ground speed), and an ADF may home in on a commercial radio transmitter at a town that has no aviation NAVAID. If you experience radio failure, land at the nearest airport.

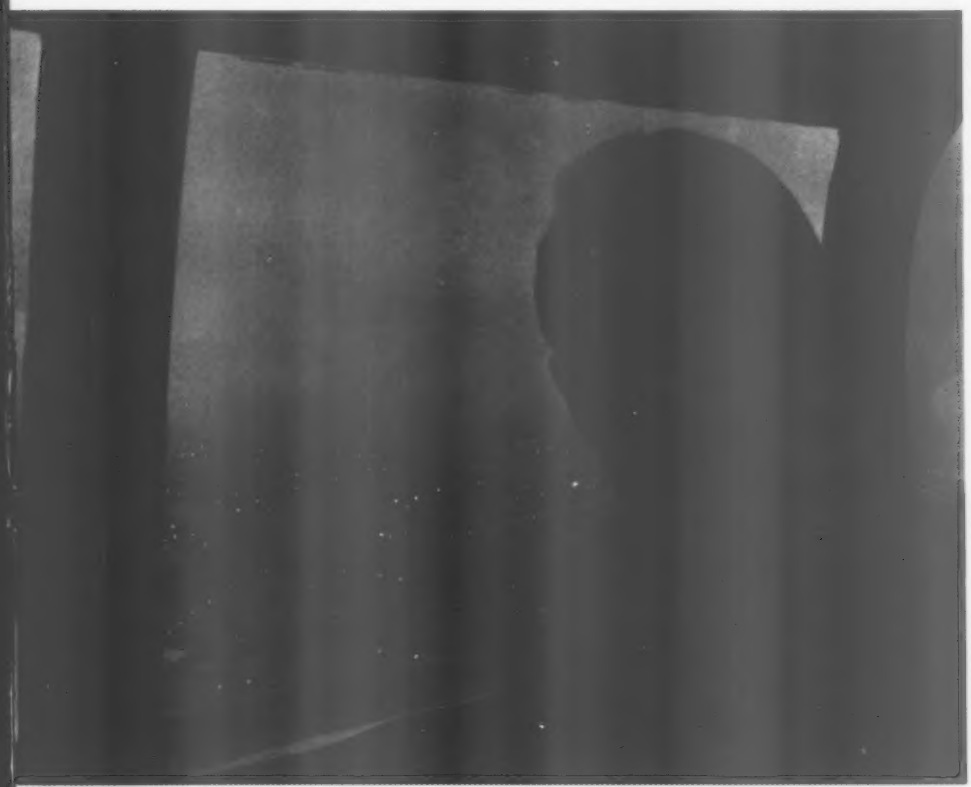
Landing. Most landing accidents at night result from an approach that is too low. During a visual night approach the pilot's eye is on the airport and the adjacent town lights; the ground below him may not be lighted at all and be invisible. If his altimeter is not set exactly for local conditions, or if he drops below the desirable angle of glide he may strike wires or trees along the approach. If the illuminated town beyond the airport is on a rise, there is a strong possibility of the glide path curving down much closer to the earth than the pilot suspects. As a safety precaution, use of the instrument approach plate is recommended for all VFR night approaches at unfamiliar airports.

Many experienced night pilots set up their final approach touch down well beyond the threshold after dark, knowing that if they err in this direction they can always go around, whereas a too shallow approach can place them in contact with an immovable object.

It is always worth a phone call ahead, if you have any doubt, to make certain your destination airport is open at night and will be lighted at the time of your arrival. Ridiculous as it may sound, it is also important to make sure that what you are landing on is an airport runway, and not a superhighway or shopping center parking lot. All that glitters in the night is not runway lights.

If you are just getting into nightflying you may enjoy a new FAA movie on the subject. "Dusk to Dawn" follows an overnight flight from St. Louis to Phoenix, and ends up at John Wayne's cattle ranch for an auction. Available for use by clubs and groups from the FAA Film Library (AAC-44.5), FAA, P.O. Box 25082, Oklahoma City, OK 73125, or through your GADO or accident prevention specialist. (Film No. FA-06-71).

Visual orientation is a whole new ballgame at night—nothing looks the same. Is that a runway down there, or just a straight stretch of superhighway? Was that an airplane you thought you saw a moment ago? Or a reflection of panel lights on the window pane?



The Reid-Hillview Story

A general aviation airport that managed to stay alive by gaining community status and acceptance

San Jose, Calif., once an agricultural center in Santa Clara County, is rapidly becoming a big city, with a population of over half a million persons. One of the near victims of that urbanization process was the county airport, Reid-Hillview, a Mecca for general aviation in the middle of the state. But for the leadership of two doggedly aviation-oriented individuals, that airport might have been swallowed up by the growing city and never seen again, a victim of public irritation as well as modern progress.

One of the leaders was Olen L. C. "Bob" Young, a "country boy" from Dillon, Montana, with 15 years of experience in FAA's air traffic service. As chief of the Reid-Hillview air traffic control tower, Young had sensed the groundswell of citizen irritation concerning the effects of close-in aircraft operations long before it reached its climax. Together with airport manager Edwin Thurmond, he planned and carried out a bold and imaginative counter-movement which eventually restored in the townspeople harmony and a feeling of compatibility toward the airport. There are still some "anti-aviation" voices in the populace, but many of the points of irritation have been eradicated; the safety of aircraft operations over the populated areas has been improved; and the airport is now considered to be an important contributing member of the community.

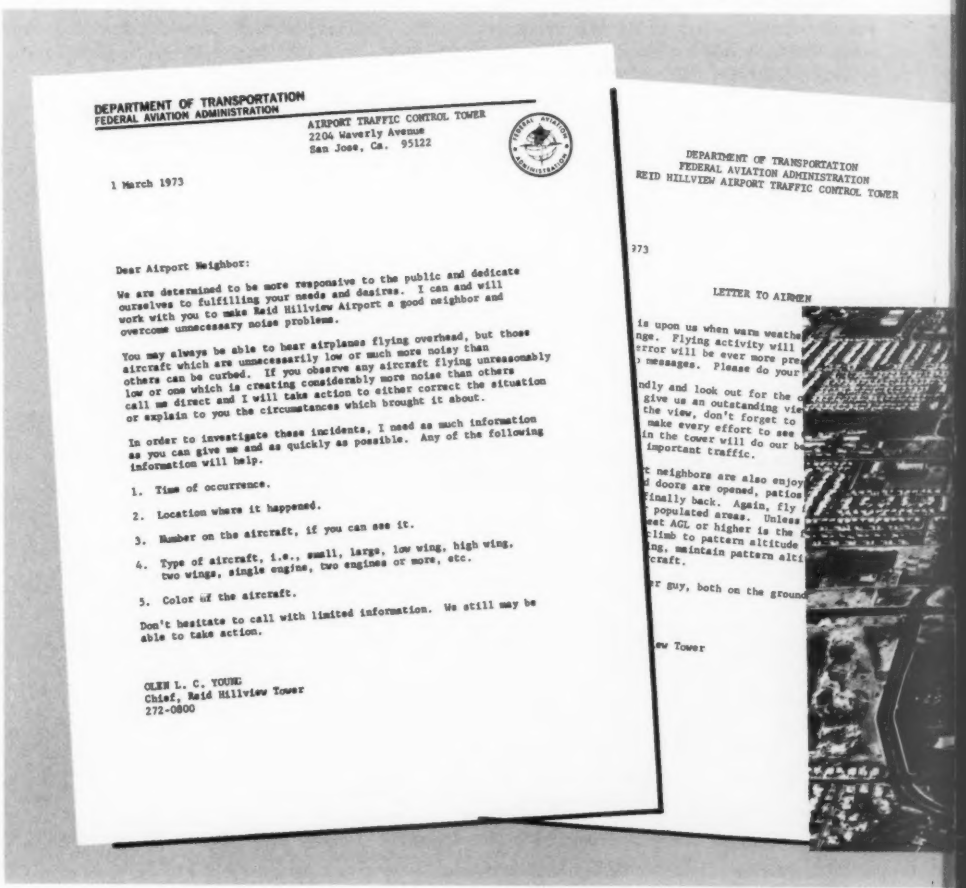
Like many airports built in the late 30s, Reid-Hillview was sited in what was then a completely rural setting, miles away from the center of the dusty farming town of San Jose. The vineyards, orchards and truck gardens of the upper Santa Clara Valley were little affected by the roar of aircraft engines, and if now and then a plane made an emergency landing in a cow pasture no one was disturbed. But as the years passed, the town grew down into the valley and eventually surrounded the airport with houses, schools, and finally a vast modern shopping center. A highway was built just beyond the threshold of the two parallel runways, and on all sides a community of homes clustered thickly.

Furthermore, a commercial airport for air carriers was developed to the north of the city, so that there seemed to be little justification for the continuance of Reid-Hillview in the minds of San Jose citizens, who came to find intolerable the noise of aircraft taking off and landing in near proximity. Several groups of citizens organized campaigns to close down the airport, in the name of economy, ecology and the common good. As far as they were concerned, the airport had become a white elephant, and small plane flying was an interesting but unnecessary relic of the past.

Although Bob Young did not assume his duties at the tower until the early fall of 1972, as a member of the regional air traffic staff in Los Angeles he had been fully aware of the problems at Reid-Hillview airport. Once on the scene he worked up, together with Airport Manager Thurmond, a six-point program designed to restore good relations between the airport and its users and the town of San Jose.

As a first step, a letter was sent to all owners of aircraft based at Reid-Hillview and to all pilots known to operate out of the airport, alerting them to the danger that the airport might be shut down by the county in consequence of current citizen actions and protests. The letter was not critical of any particular flight activity, but simply endeavored to make pilots aware of the sensitivities of persons living, studying and working adjacent to the airport. Many pilots had never actually given the matter any thought before, and were quite willing to accept some responsibility in respecting the rights of people on the ground.

The next step was to contact the citizens in the immediate neighborhood of the airport. The 12-member FAA tower staff hand-delivered over 900 letters to nearby homeowners asking them to help identify the exact source of their irritation, if any, from airport activities. The letters, signed by tower chief Young, promised corrective action wherever possible. Interestingly, the responses to this letter were even more favorable. Most of those contacted felt that FAA was in fact doing a good job in keeping air-



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT TRAFFIC CONTROL TOWER
2204 Waverly Avenue
San Jose, Ca. 95122

1 March 1973

Dear Airport Neighbor:

We are determined to be more responsive to the public and dedicate ourselves to fulfilling your needs and desires. I can and will work with you to make Reid Hillview Airport a good neighbor and overcome unnecessary noise problems.

You may always be able to hear airplanes flying overhead, but those aircraft which are unnecessarily low or much more noisy than others can be curbed. If you observe any aircraft flying unreasonably low or one which is creating considerably more noise than others call me direct and I will take action to either correct the situation or explain to you the circumstances which brought it about.

In order to investigate these incidents, I need as much information as you can give me and as quickly as possible. Any of the following information will help.

1. Time of occurrence.
2. Location where it happened.
3. Number on the aircraft, if you can see it.
4. Type of aircraft, i.e., small, large, low wing, high wing, two wings, single engine, two engines or more, etc.
5. Color of the aircraft.

Don't hesitate to call with limited information. We still may be able to take action.

OLEN L. C. YOUNG
Chief, Reid Hillview Tower
272-0800

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
REID HILLVIEW AIRPORT TRAFFIC CONTROL TOWER

LETTER TO AIRMEN

craft engine noise to a minimum.

Nevertheless, Young and Thurmond quickly scheduled a number of meetings with the nine fixed base operators on the airfield and with some 400 active and interested pilots as well as others involved in aviation. The FBOs who conducted flight instruction agreed to caution students about flying low over populated areas—a universal temptation for the newly fledged pilot who wants to waggle his wings at his wife or girlfriend. Stalls were to be practiced only far out in the country.

Charts were used to isolate the most sensitive areas affected by engine noise, and alternate approach and departure procedures were discussed. It was felt that the common use of a 45 degree angle approach to the pattern, which tended to saturate a particular area with noise, was not necessary at all times for all pilots, and that with the assistance of tower controllers the traffic pattern could often be safely entered with a straight-in downward entry. The pattern altitude was raised from 800 feet above ground level to 1,000 feet, and pilots were urged to improve their landing techniques so that they could complete an approach without sudden applications of power when they dropped too low. They were also encouraged to avoid extending their approach excessively or dragging in at an excessively shallow glide angle.

If an airport and town are to survive as good neighbors there must be understanding on both sides. At Reid-Hillview pilots were contacted and asked to "fly friendly". Some 900 letters were hand-carried to neighboring residents explaining the role of general aviation and asking cooperation.

By means of a videotape camera set up in the tower, Young was able to show the assembled airmen the difference between the really skillful pilots who maintained proper glide and climb angles, and those who seesawed all over the airport. The habit of climbing out at a shallow angle in order to build up enough airspeed to pull up dramatically was discouraged as "kid stuff", contributing unnecessarily to public annoyance.

While general aviation users of the airspace were being re-educated by Young on the importance of being a good neighbor, Edwin Thurmond was concerning himself with the education of the non-aviation oriented population of San Jose as to the positive contributions of general aviation to a community. He wanted to make it clear that Reid-Hillview was something more than a playground for flying buffs; that it represented a substantial part of the city's tax base, with a $1.9 million annual payroll, including 220 jobs and sales totaling $11.8 million a year. Nearly 10 percent of the 400 aircraft based on the airport were serving local business enterprises, and he wanted that known too.

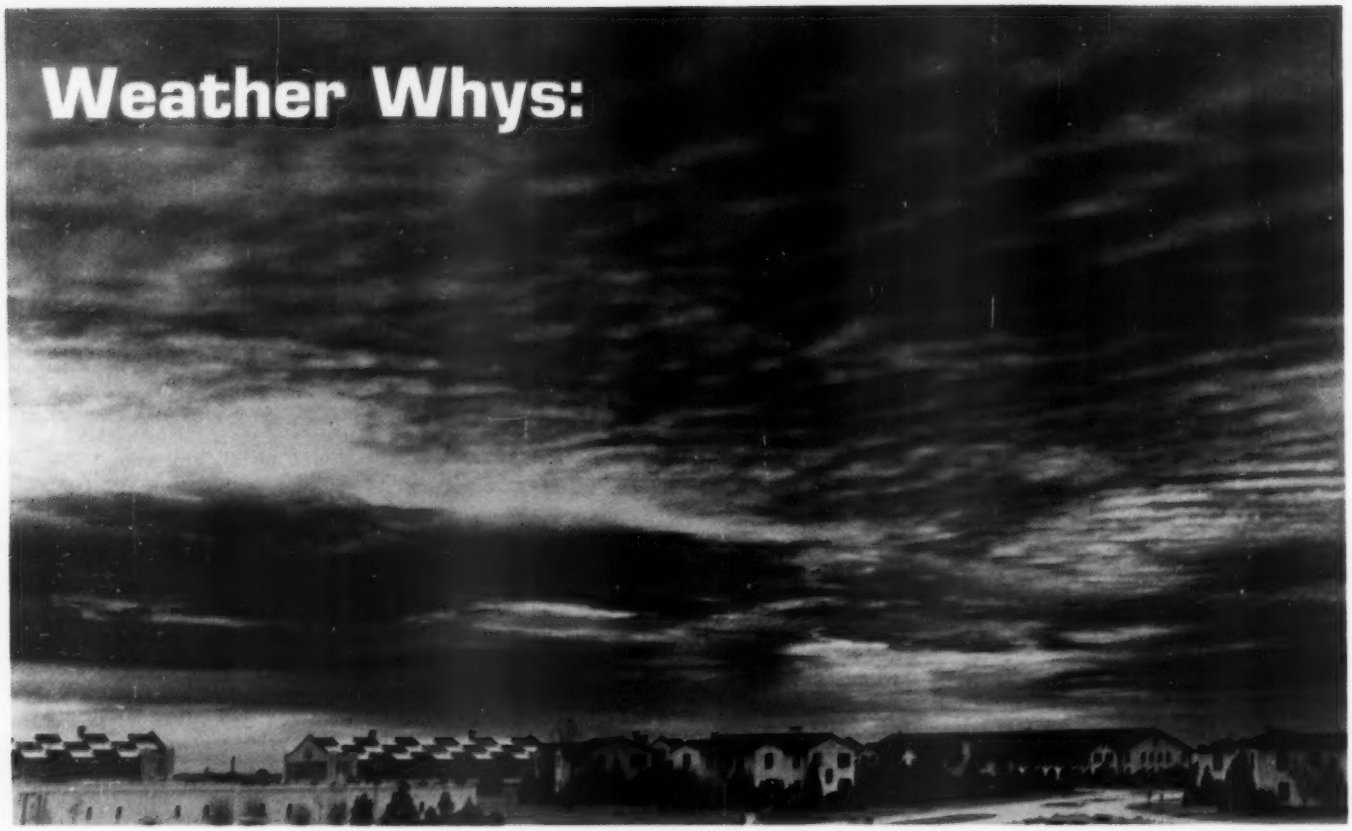
He put all of his facts together in the form of an 18-minute slide-tape presentation that was shown on 45 separate occasions to civic clubs, businessman's asscciations, real estate groups, church organizations and educators in the San Jose area. For the first time local citizens were able to view the airport as an economic asset to the community, and to balance its contributions to local prosperity against the disadvantages claimed by those opposed to its continued existence within the city. For example, many persons had been unaware of the fact that an FAA control tower in operation 16 hours a day supervised the movement of aircraft in and out of the airport.

Finally, Young and Thurmond generated a two-pronged effort to get general aviation involved in the recreational and educational activities of the city. An investigation of the local sports programs revealed that the Eastridge Little League, composed of 300 boys aged 8 to 12, was wandering around from one ball park to another for lack of a home field of their own. Although Reid-Hillview airport consists of less than 200 acres, arrangements were made to construct three baseball diamonds directly in front of the terminal building. In this manner the airport was able to serve non-aviation needs of the community without interfering with aircraft operations in any way. The youngsters who came out to play ball, and their parents who came to watch, had an excellent opportunity to become acquainted with many aspects of aviation entirely new to them.

The final step in the airport's "outreach" program was the development of an aviation curriculum in the city's school system, and the sponsorship of flight training scholarships for high school students. After much prodding by the tower chief and airport manager, airport business firms agreed to offer a total of 36 flight scholarships annually, distributed among the nine high schools in the district, taking the student from zero time through solo flight. To qualify for the scholarships, the students would enroll in a new aviation curriculum worked out by Young and Thurmond and the airport sponsors, and eventually accepted by the school board as a regular part of the school curricula.

Consequently Reid-Hillview Airport has become a "laboratory" for specialized learning which is expanding the horizons of San Jose students. Thanks to the continuing community involvement of the airport, there has been a distinct shift in the attitude of many persons toward it. Consistent efforts by pilots to keep noise irritation to a minimum and to avoid low flying over populated areas has reduced the antagonism of others. There is still some opposition to the presence of a non-commercial airport within the city, but there seems to be growing support for the belief that general aviation can be a good and helpful neighbor.

Airplanes taking off overhead and the 300 Little Leaguers who use the three airport baseball diamonds disturb each other not at all. Kids and parents get a box-seat view of aviation.



Visibility

This is the sixth article in a series on aviation weather prepared by meteorologists of the National Weather Service.

The measurement of visibility is one of the least satisfactory elements in the aviation weather observation. Modern instruments can measure cloud heights, wind and temperature precisely enough. But visibility is always dependent upon the individual's eyesight.

To maintain level flight, the VFR pilot must be able to see the ground or some other reference points. He must be able to avoid collisions and to make a 180 degree turn without entering clouds. Visibility is especially crucial to takeoff and landing operations. Even the instrument pilot in the vast majority of landings, must rely on his eyes as he approaches the runway.

As reported in the aviation weather observation, visibility is intended to be a measure of the transparency of the atmosphere, evaluated in terms of what the normal human eye can see.

The transparency of the atmosphere decreases in relation to the number of particles of foreign matter suspended in it. Dust, smoke, snowflakes or water droplets in the form of fog, clouds or rain scatter light rays and reduce visibility.

The angle of the sun's rays passing through the atmosphere also affects visibility. When the sun is low, in early morning or evening, visibility is generally poorer than it is during the middle of the day.

A Product of Industry

Industrial centers create their own special visibility problems. Smoke and fog are common in these areas and are frequently reported in combination. Smoke itself contributes to the formation of fog by providing particles on which water vapor can condense. Morning visibility is often reduced drastically by a photochemical process that produces sulphur trioxide from combustion products suspended in the air. The effect is most noticeable about an hour after sunrise and lasts for two or three hours. Visibilities *toward the sun are often reduced to fractions of a mile when the sun is near the horizon and haze, dust, smoke or fog are present, although visibilities in other directions may be several miles.*

In order to make effective use of visibility reports, the pilot should understand how the observations are made and what their limitations are. With instruments and methods now available, *visibility can be measured only along the pilot's line of vision when he is on the ground.*

Prevailing visibility. To evaluate prevailing visibility, the weather observer looks for prominent landmarks around his station. He knows the distance to various permanent objects—radio towers, buildings, hills—within visual range of the airport. In daylight hours, he uses these reference points to determine the visibility. At night, he looks for permanent lights of known intensity and distance.

The observer reports essentially the *median* distance—in miles and fractions—that prominent objects can be seen and recognized throughout the horizon around his station. He might, for instance, be able to see three miles to the north and south, five miles to the east and one mile to the west. Prevailing visibility would then be three miles.

This procedure attempts to insure that a

pilot will have an average visibility of about the reported value when he is circling the airport.

If visibility is three miles or less and the observer feels that it will help the pilot, he may add remarks to his report. In the situation described above, he would report the prevailing visibility as three miles and might add that visibility was five miles to the east and one mile to the west. These remarks are very important and should never be slighted in reading aviation weather reports.

Runway visibility. The pilot's main interest is visibility on the runway, and this is *not necessarily the same as prevailing visibility*. At a number of airports, visibility is measured along the instrument runway actually in use. This measure is reported as "runway visibility."

It is made by an instrument called a transmissometer, which measures the transmission of light through the atmosphere over a fixed path. This information is then translated into terms of what the human eye can see. During daylight hours, the reading represents the distance from which dark objects can be seen against the horizon. At night, its measurements indicate how far a moderately intense, unfocused light of 25 candlepower can be seen by the human eye.

Much of the value of the runway visibility report depends on the pilot's knowledge of the landing field and the relative distances of reference points. When the runway is known through experience, a few familiar landmarks are often enough to enable the pilot to guage his landing properly. When landing at an unfamiliar airport, you need more than the minimum requirement of runway visibility.

Runway visual range. A measure of visibility appearing in the "remarks" portion of aviation weather reports should be familiar to all pilots. The measurement known as Runway Visual Range or RVR is *based on the visibility of high-intensity runway lights which a pilot can see more readily than anything else nearby*. The RVR report tells the pilot about how far down the runway he will be able to see from the point of touchdown.

There is an important difference, then, between runway *visibility* and runway *visual range*. At night, runway visibility is defined in terms of the distance that a light of moderate intensity can be seen. Because the runway lights used in calculating runway visual range have peak intensities measured in thousands of candlepower, they obviously can be seen by pilots from much greater distances.

The visibility from an aircraft may be very different from that on the surface. Often a pilot in the air can see the ground through a low-lying fog when the surface visibility is very low. At other times, the surface visibility may be eight or ten miles, but haze or smoke aloft make visual navigation difficult.

In flight, visibility is often related to the speed of the aircraft. Reports of surface visibility are, of course, made at a stationary point. If visibility is restricted by precipitation, the effect is much more severe in a moving aircraft, just as it is in a speeding car. *Pilots changing to higher speed aircraft should bear in mind that any increase in speed affects visibility during rain or snowstorms.*

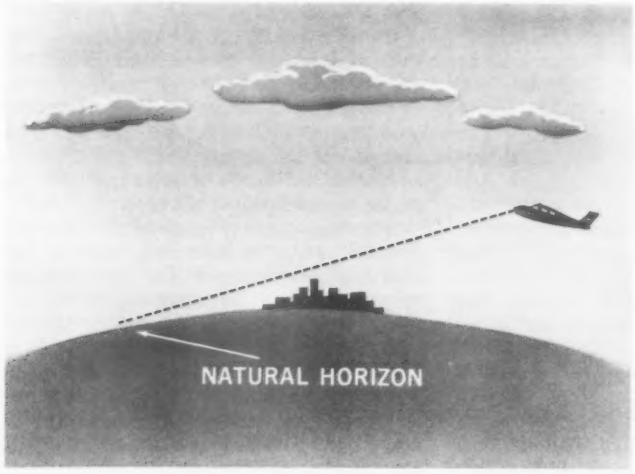
Slant Visibility

No existing instrument can measure visibility from the aircraft to the runway, called the "slant" visibility. Such a measurement would tell the pilot at what height and from what distance from the end of the runway he could expect to recognize objects on the ground. He would then know in advance how many seconds he would have in which to correct his final approach before touchdown.

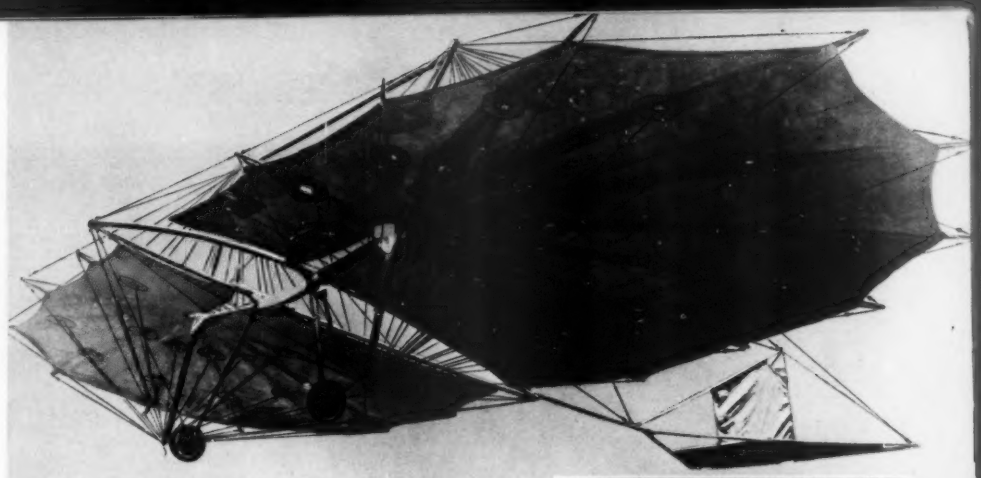
Today, slant or in-flight visibility measurements can only come from pilots. These reports are valuable to forecasters, briefers and other pilots. Air-to-air, air-to-ground, and slant visibilities become more and more important as aircraft fly faster.

Today's instruments for measuring visibility have removed some of the human element from the aviation observation. Scientists are now seeking a way to measure slant visibility, and, when it is found, the IFR pilot will know exactly how much time he has to correct his final approach. The VFR pilot will still have to depend on visibility determined by eyes just like his own.

Above—National Weather Service technician uses a transmissometer to measure the visibility on the runway. **Below**—in conditions of good visibility (left) the natural horizon provides a constant visual reference. In clouds or rain, the effective horizon may be of little or no help.



Famous
FLYERS



The *Hawk*, which flew 250 yards in 1897.

The Birdman of Britain

Percy Sinclair Pilcher

The last decade of the 19th century saw interest in the possibilities of human flight rising to a fever pitch in many quarters of the globe. The much-heralded exploits of Otto Lilienthal, the "Bat-Man" of Berlin, convinced many persons that human ingenuity and material resources had finally reached the point when men would be able to outdo the birds in defying gravity.

It was the first great age of gliders, when adventuresome men sought to learn from observation and experience how to control an airborne "machine" so that it could be glided to a less than violent landing. Although Lilienthal had paid for his aeronautical experimentation with his life in 1896, while the Wright brothers were still building bicycles, that same period saw a young Scotsman, Percy Pilcher, come into prominence as a remarkably successful "birdman." But for an ill-favored wind and a soggy outbreak of weather, Pilcher might easily have achieved immortality as the first man to build and fly a powered aircraft.

Born in 1866 into a Scottish family with a Navy tradition, young Percy Sinclair Pilcher left terra firma at age 13 to serve as a cadet on board the Royal Frigate *Britannia*. At sea almost constantly for the next six years, his attention was caught up by the flight of birds dancing in the wind, and his imaginative mind theorized broadly on the subject of aerodynamics.

Pilcher left the Navy at age 19, worked briefly in a Glasgow shipyard, attended the University of London, and finally became a lecturer in Naval Architecture and Marine Engineering at Glasgow University in 1893. The appointment gave him an opportunity to build his first glider, the *Bat*. This was a monoplane hang-glider (the pilot clung to the framework with his body dangling below) in the Lilienthal manner.

The "bodypiece" or fuselage was a pine beam about 12 feet long. The sharply dihedral wings (to afford stability against updrafts), covered with nainsook cotton, had an area of 151 square feet and were designed to support two pounds per square foot; the aircraft weighed 45 pounds. The tail section was shaped "like the outspread tail of a cow, with a horizontal rudder working up and down on the vertical one."

On an early spring day Pilcher and his sister, Ella, went out to a hillside near Cardross, overlooking the windy Firth of Clyde, unpacked and assembled the *Bat* (which he had built in a small loft in town). Running downhill against a light wind, Pilcher rose in the *Bat* about 12 feet above the ground, hovered in place for several minutes, and then landed rather easily by flinging his weight forward. However, on his second landing a gust of wind flipped the glider over and broke one of the spars.

Following a visit to Lilienthal, his German mentor, in 1895, when he learned how to offset gusts by shifting his body sideways, Pilcher reduced the dihedral of the *Bat* and added a movable tail "plane" (elevator). He was now able to make what was recorded as the first controlled flight in the British Isles on September 12, 1895.

For his next gliders, the larger *Beetle* and the *Gull*, Pilcher developed the towrope takeoff method suggested 50 years earlier by Sir George Cayley. Using as much as 400 yards of fishline, attached to a team of horses, this technique enabled the glider to rise to a much higher point than its actual takeoff elevation—a difficult feat when starting the takeoff from a hilltop and running down.

To build these aircraft Pilcher and his sister rented a farmhouse at Cardross, where daily test flights could be made. The *Beetle*, which was actually designed to carry an engine, proved to be too cumbersome to gain altitude; and the *Gull*, designed for light winds, was eventually found to be too skittish for anything but the softest of breezes.

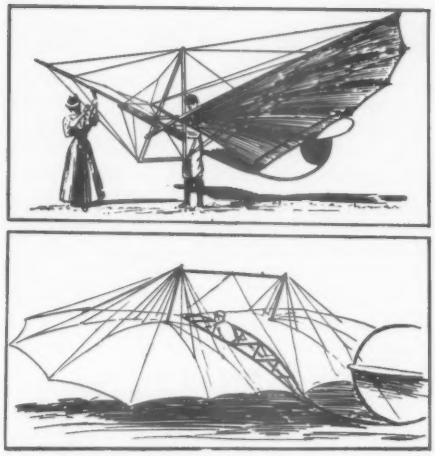
In 1896 Pilcher gave up his post at Glasgow and formed his own engineering firm with a partner in London. At the same time he transferred his glider operations to Eynsford, in the countryside of Kent, where he constructed the most successful glider of the period—the *Hawk*.

The nautical background of the inventor showed clearly in this design. The wing was stiffened with pine ribs, each slipping into a long pocket like a batten in a sail, and the wingcloth itself was laced to the fuselage. The camber of the wing was 1 to 20, with the apex located about one-third back from the leading edge. Bamboo rods, guywired to the wing, supported two landing wheels, with coil springs added to absorb shock.

The aircraft was launched from a small hilltop by means of a rope which stretched across a small valley to a pulley situated on another hilltop—a team of men or horses raced down the slope to give the wheeled glider an unusually fast takeoff speed. The *Hawk* established a world distance record of approximately 250 yards (some say 300 yards) in 1897. The patent described the machine as being suitable "for soaring, or with a motor and propeller for flying."

It was for this machine, the *Hawk*, that Pilcher planned to manufacture a gasoline engine, and in the following winter of 1898, he turned his attention to this project. His own company, Wilson and Pilcher, Ltd., carried out the design work, construction, and bench testing. He planned to situate the engine in the nose of the aircraft, "with a shaft passing over my head, working a screw propeller of about four feet diameter behind me." He calculated that with a power output of four hp he could achieve an airspeed of 30 mph.

This work was interrupted for a while in 1899 as Pilcher spent some time experimenting with designs sent to him by Lawrence Hargrave, an Australian pioneer in aviation who in 1894 had demonstrated with a kite and small motor the feasibility of heavier-



Top—Pilcher's first craft, *Bat*, a hang glider. Below—the *Gull* was tow-launched with fish-line pulled by a team of horses.

than-air flight. Based on Pilcher's kite flying experience, Wilson & Pilcher, Ltd. constructed a tri-plane glider, but it proved to be impractical.

Feeling certain that he was close to actual powered flight, Pilcher now sought the active support of prominent people to form a new company to explore the many uses he saw for a successfully powered flying machine. It was in pursuit of this goal that he lost his life.

Saturday, September 30, 1899, was a gusty day at Stanford Park near Market Harborough. A group of interested spectators, including Mr. Henniker Heath, a Member of Parliament, who was greatly interested in the invention, awaited a demonstration flight of the *Hawk* which had been delayed several hours due to the rain.

Pilcher was so anxious and determined to make a success of this trial that, despite the damp weather which had soaked the glider and made it difficult to launch, he persisted in taking off. He rose slowly in the machine until he had traveled about 150 yards and climbed more than 60 feet. He had done this many times before, and except for the rain there seemed to be no problem. Suddenly a sharp gust of wind snapped the tail section strut. The *Hawk* turned completely over and crashed to earth with Pilcher beneath the wreckage. He never regained consciousness and died two days later, aged 33.

A tribute to him by the Royal Aeronautical Society referred to him as "a most ardent worker, and one of the cleverest, most practical and most energetic of aerial experimenters." Seven months after his tragic death, young Wilbur Wright, in a letter to Octave Chanute, asked,

"If you can give me information as to where an account of Pilcher's experiments can be obtained I would greatly appreciate your kindness."

The torch he had carried, briefly but courageously, did not go out. ■

Pilot BRIEFS

■ AN UPDATED DIRECTORY of FAA-certificated aviation maintenance technician schools has been published. Certification of a school by FAA indicates that it meets the requirements of FAR Part 147 for the rating issued, but does not necessarily indicate that the school has been approved for educational purposes by other Federal or State agencies. This and other information about a specific school can be obtained by contacting the school directly at the address listed in the free directory, AC 147-2L.

■ LEAD-IN STROBE LIGHTS. FAA's "Economy Approach Lighting Aids" Advisory Circular (150/5340-14B) has been amended to include a lead-in approach lighting system utilizing omni-directional strobe lights. The system consists of seven strobe lights located at the approach area of a runway. Five of these strobes are located on the extended runway centerline, at 300-foot intervals from the runway landing threshold. The other two strobes are located on the sides of the runway landing threshold. Lights flash in sequence toward the runway once per second, with the two units located at the runway end flashing simultaneously.

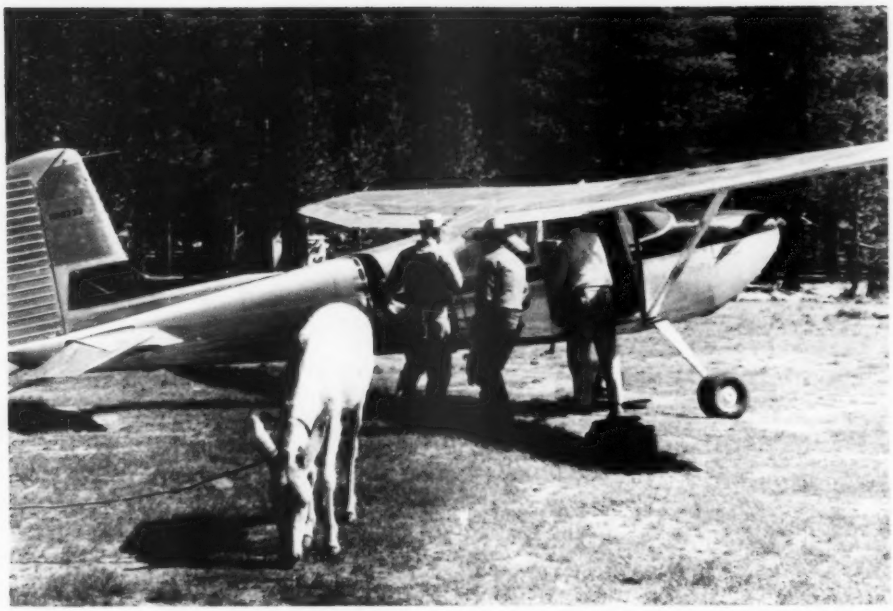
■ SPIN-ON TYPE OIL FILTERS. Inspection of the oil screen has long been recommended at the time of oil changes, since the detection of metal particles in the screen is often the first warning of incipient engine failure. Spin-on type oil filters are more difficult to disassemble for internal examination. To solve this problem some manufacturers are developing a special cutter to open the steel casing of the filters, facilitating inspection. Check with your supplier.

■ CORROSION CONTROL FOR AIRCRAFT is the title of a comprehensive new 97-page FAA Advisory Circular, AC 43-4. Although there is no way presently known to eliminate corrosion, which is complicated because it takes many forms, the corrosion rate can be slowed with proper precautions. Effective measures, such as protective films and sealants, special inspections, etc., are described in great detail in the free circular, which is exceptionally well illustrated. Suitable for pilots as well as maintenance men.

■ MARKING OF PAVED AREAS ON AIRPORTS is the subject of revised FAA Advisory Circular AC 550/5340-ID that describes and diagrams standards for marking serviceable runways and taxiways as well as closed or hazardous areas on airports. Changes revise the position of the taxiway holding line, and allow touchdown zone marking on one end of the runway.

■ TOO HIGH FOR COMFORT. In ruling against a recent industry request that executive jet aircraft be certificated for flights as high as 47,000 feet, FAA's Office of Aviation Medicine pointed out that altitudes at this level are physiologically intolerable in the absence of pressure suit utilization. Today's business jet aircraft have essentially reached their maximum ceiling.

ADVISORY CIRCULARS described in this column are available free from DOT Distribution Unit, TAD 484.3, Washington, D.C. 20590.



Airmen Certificates May Be Revoked for Drug Violations

Pilots participating in drug usage or smuggling can expect to lose their pilot certificates under stringent new FAA rules which went into effect August 1. Denying, revoking or suspending FAA certificates may result not only from carrying drugs in an aircraft, but also from being convicted of any Federal or State drug law concerning growing, handling or possession of narcotic drugs, marihuana, and depressent or stimulant drugs.

The rule applies to all FAA-certificated pilots, flight engineers, air traffic controllers, dispatchers, mechanics, repairmen and parachute riggers. Certificates of commercial operators, including flight schools, will also be suspended or revoked if their aircraft is used in drug smuggling. To aid in the enforcement of the new rules an appropriate flight plan will be required for civil flights between either Mexico or Canada.

Earlier drug rules, which applied only to flights between Mexico and United States, were issued in 1969 to cope with aviation safety hazards which resulted from smugglers attempting to avoid detection of their activities by low flying to escape radar detection, flying in bad weather and using unsafe landing areas. Recent evidence, however, indicates the existence of drug smuggling in other areas.

New ACs Out for Instructors, Mechanics, Dispatchers

Advisory circulars of interest to aspiring instructors, aircraft dispatchers, and mechanics have been revised by FAA and are now available.

The "Airplane Flight Instructor Written Test Guide" lists certification requirements and application procedures, and describes the written examination with a sample test and an explanation of the correct answers. AC 61-11B is available for 80 cents by mail from Superintendent of Documents, Washington, D.C. 20402, or from Government Printing Office bookstores for 55 cents. (Stock #5011-00061.)

The "Airframe and Powerplant Certification Guide" describes certificate requirements, application procedures and the written, oral and practical tests. AC 65-2C is sold for 90 cents by mail from the above address, or from GPO bookstores for 65 cents. (Stock #5007-00192).

The "Aircraft Dispatcher Written Test Guide," AC 65-4B, outlines the type and scope of knowledge covered in written and practical tests, lists reference materials and presents sample questions. Pertinent FARs are included. Available by mail for 95 cents or from bookstores at 70 cents. (Stock #5007-00190).

Airport Planning Grant for Navajos

FAA has approved a $40,000 airport planning grant to plan an air transportation system within the 24,000 square mile Navajo Indian Reservation area. Some 135,000 Navajos live on the Reservation, which includes parts of three states—Arizona, New Mexico and Utah.

Under the Airport and Airway Development Act of 1970 FAA is authorized to pay for up to two-thirds of planning studies.

More Prefabricated Towers Ordered

An additional 31 prefab control towers for low-activity airports have been ordered by FAA. The non-radar towers, to be built by AVCO Corp., Cincinnati, will be delivered between January 1974 and September 1975, at various locations in the 48 continental states, including one at the Grand Canyon. Tower shafts will range in height from 40 to 70 feet, depending on the requirements of each location. In April 1972 FAA contracted with Hunt Building Corp., El Paso, Texas for 64 VFR towers.

FAA Honors Oldest Racing Pilot

S. J. "Steve" Wittman, at 71 one of the oldest racing pilots in the United States, was honored recently when he received the FAA Award for Distinguished Service from Administrator Alexander P. Butterfield. Presentation was made at the 21st Annual Experimental Aircraft Association Convention in Oshkosh, Wis. Mr. Wittman, for whom Wittman Field in Oshkosh is named, is believed to have participated in and has won more air races than anyone else. He began operating a flying service at Winnebago County Airport in 1931, became airport manager in 1940, and retired in 1969.

New Circular on Slip-form Paving

The use of "slip-form" paving with Portland Cement concrete for airport construction is discussed in a new FAA Advisory Circular. If properly used the slip-form method, which involves forms that are moved along with the paver as the pouring is done, is an acceptable procedure and can often result in faster, less expensive construction. AC 150/5370-9 contains guidance for slip-form use, and is available free from DOT Distribution Unit, TAD 484.3, Washington, D.C. 20590.

FAA Alert List

The following aircraft were listed at press time with the FAA Office of Air Transportation Security as stolen or missing:

Am. Trainer	N9245L
Beech 35	N2967V
Cessna 172	N3011U
Cessna 182	N2415Q
Cessna 182	N5706B
Cessna 210	N3884Y
Cessna 310	N8009M
Mooney Cadet	N9798M
Piper Aztec	N13996
Piper PA-28	N6542J
Piper PA-32	N8919N
Stinson 75	N8039K

If you see any of these aircraft advise the nearest FAA flight service station at once. If your aircraft is stolen, notify the local police and FSS.

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but names will be withheld on request.

• Goose Accidents

An article in the June 1973 issue ("Public Eyes") described accidents related to the Grumman *Goose* and the fix. Please be advised that the problem still exists. As an Aviation Safety Consultant and avid reader of FAA AVIATION NEWS, I am disappointed with a "Band-aid" fix. The Grumman *Goose* has been flying for over a quarter of a century—how come all of sudden the hot cross feed problem surfaces?

George H. Lehman
La Habra, Calif.

Perhaps you are not aware of all the facts involved. In the Goose *when the cross feed valve is open and there is a significant difference in the output fuel pressure between the engine driven fuel pumps of the two engines, the pump with the higher pressure appears to overpower the flow output of the weaker pump. This induces a back flow, resulting in high local fuel temperatures, which can cause vapor lock and interrupt fuel flow to both engines. Since this happens only when the cross feed valve remains open for an extended period, the solution was (1) to require that fuel pump output pressures be set to within ½ psi of each other or (2) to limit cross feed valve operation to emergency use only. As it is difficult to obtain close fuel pump settings because of inherent instrument system errors, it was elected to impose the cross feed valve operational limitation.*

• More on Fire Fighting

To the list of reference publications mentioned in your article on fire-fighting at the airport (August, 1973), I recommend that you add "Aircraft Rescue and Fire-fighting Service at Airports," Publication No. 402 of the National Fire Protection Association. Their address is 470 Atlantic Avenue, Boston, Mass. 02210.

Vic Hewes
ALPA Safety Committee

• Radio Contact

In the May 1973 Forum, a pilot requested some sort of signal when controllers were busy, as reassurance that his radios were not inoperative. You stated that this would give the controller added workload in identifying the calling aircraft for a later response. What if the calling aircraft doesn't expect a response? It would help to have just a "bleep" that would signify "I'm busy—please call me back in a few minutes."

Robert T. Harrison, Jr.
Las Vegas, Nevada

As pointed out in the May issue it's impossible to answer every call immediately because of controller and FSS specialist workload. The problem would be compounded by having the controller signal when busy with another pilot. Until a better system of communications is perfected, the controller and pilot must work together to alleviate frequency congestion through good operational practices. For the pilot this means monitoring frequencies before calling (which will often reveal that the controller is busy), being brief with messages, and listening to an automatic weather and terminal information service (ATIS) broadcasts.

• Up-to-date Figures

Recently you listed the active women pilots for 1971 as follows:

Private	11,409
Commercial	1,897
ATR	79

I would be interested in seeing these figures updated.

Suzanne Parish
Hickory Corners, Mich.

The 1972 figures for women pilots are as follows:

Private	*13,391*
Commercial	*2,196*
ATR	*101*

• West is not East

I enjoyed your article on the S-42 in the June issue. However, in paragraph six, I must point out that the direction from the Stratford lighthouse to the George Washington Bridge is west, not east.

I enjoy your magazine now even more after recognizing that the FAA is not, after all, infallible.

V. A. Parsons
Asheville, North Carolina

• Earliest Birds

Could you print a list of the first 20 pilot certificate numbers and the name of the holder of the lowest certificate number now "active"?

Name withheld

FAA airman records are presently filed alphabetically, rather than numerically, making it impossible to compile the list you request. However, the FAA Airman Records Center will soon be going to a computerized system, and when that process is completed such a list will be retrievable.

• Sneaking Around

I am concerned about pilots who are not instrument-rated but who fly in instrument weather anyway, with total disregard for passengers and other aircraft. How can they be stopped before someone gets killed?

I would also like to know what happens to license numbers of pilots and mechanics when they pass on?

Charles M. Mark, Jr.
Norfolk, Va.

Your concern about non-IFR pilots who attempt to "sneak" through clouds is justified: it is one of the most foolhardy things a pilot can do and many accidents are caused this way. No one should be flying in instrument conditions unless he is both instrument qualified and on an instrument flight plan. If you know of pilots who do this you should call it to the attention of your nearest FAA Accident Prevention Specialist, who will take whatever steps are necessary to stop the practice.

License numbers for pilots and mechanics are not reassigned. When the holder dies, the number remains on the books in an inactive status.

• A DME in Every Cockpit?

I enjoy FAA AVIATION NEWS, being both a private pilot and jet captain. Seems we can always learn something new from each issue. I do not agree, however, that everyone should have a DME, as you seemed to infer recently ("DME: Who Needs It?" July 1973). My partners and I are already debating selling our *Bonanza* due to the increasing "musts" in equipment, and at this time have neither the room nor finances to install a much desired DME. We already have thousands of dollars worth of Mickey Mouse equipment: radios, ADF, GS, dual VORs, couplers, autopilot, oxygen, and transponder (instead of DME, since we fly TCAs at NY and DCA). I have used DME (professionally) since it came out and think they are absolutely excellent, but then not everyone can always get everything they want.

Name withheld

Obviously every small aircraft cannot be equipped with every item on the market. Our intention was not to talk owners into making purchases they cannot afford, but to tell readers what equipment can do for them, so that they can make an informed choice as to which item will contribute most to their particular needs regarding safety and flying pleasure.

• Smoking May Be Hazardous. . . .

I am incensed by newspaper ads which depict a manly type next to an aircraft with a cigarette in his mouth. From these ads the public must assume that it is perfectly all right to wander around an airport among the airplanes with a lighted cigarette. Actually, it is a generally accepted industry practice to prohibit smoking within 50 feet of aircraft. Is there anything FAA can do about such ads?

Name withheld

A good point, but FAA has no control over the cigarette advertising industry. We suggest that you advise the tobacco company involved, and their advertising agency, of your feelings, and the safety reasons behind them.

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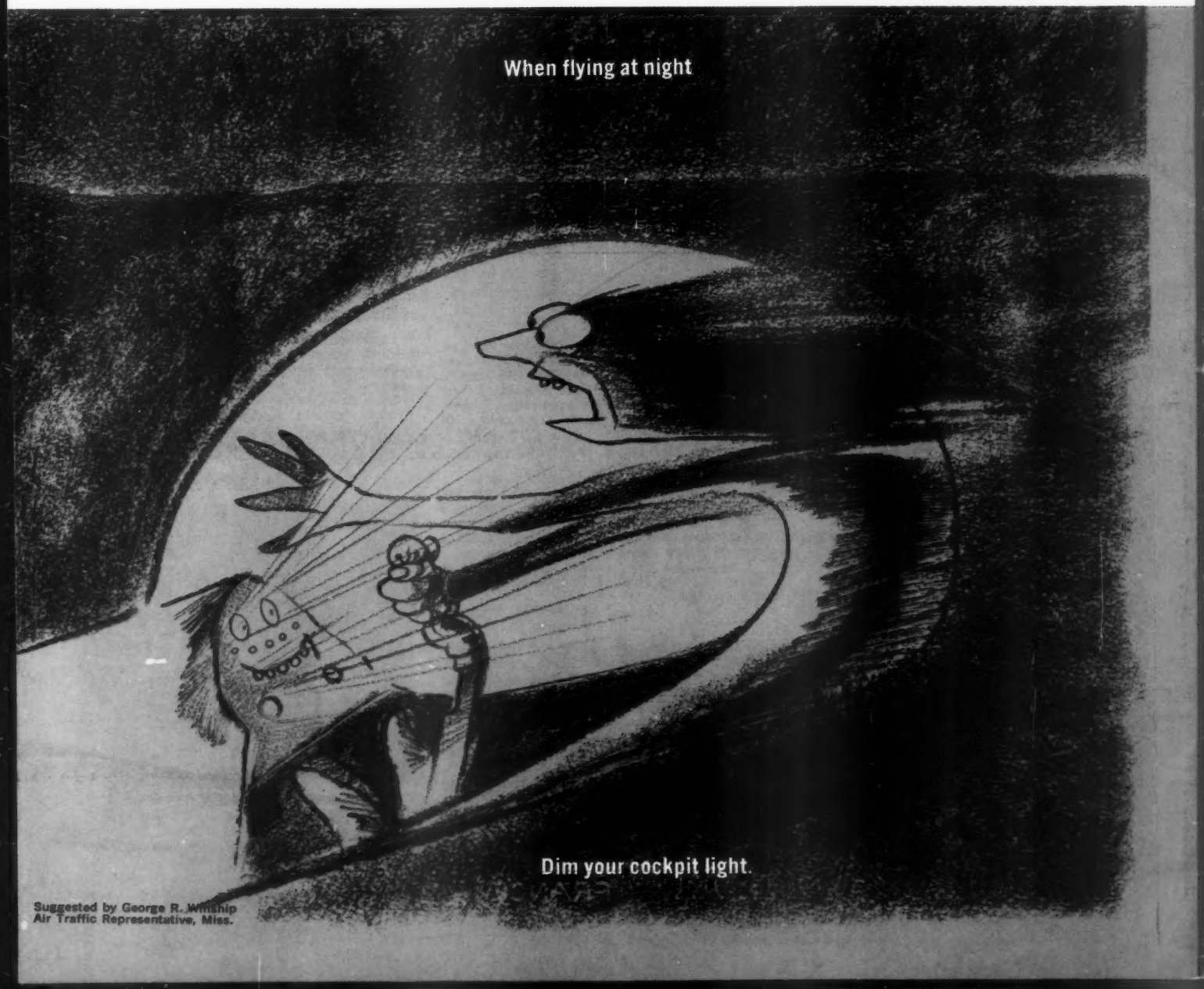
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